

A - Publications Scientifiques

1. Fangyu, L., Vialard, J., Fedorov, A., **Ethé, C.**, Person, R., Zhang, W., Lengaigne, M. (2024). Why Do Oceanic Nonlinearities Contribute Only Weakly to Extreme El Niño Events?. *Geophysical Research Letters*. 51. 10.1029/2024GL108813.
2. de Lavergne, C., Rathore, S., Madec, G., Sallée, J.B., **Ethé, C.**, Nasser, A.A., Millet, B., Vancoppenolle, M. (2024). Effects of improved tidal mixing in NEMO one degree global ocean model. 10.22541/essoar.173152139.95978362/v1
3. Millet, B., de Lavergne, C., Gray, W., **Ethé, C.**, Madec, G., Holzer, M., DeVries, T., Gebbie, G., Roche, D. (2024). Global ocean ventilation: a comparison between a general circulation model and data-constrained inverse models. 10.22541/essoar.173532470.03609119/v1
4. Dale, A., Gehlen, M., Wallace, D., Bénard, G., **Ethé, C.**, Alekseenko, E. (2023). Contribution of physical processes to variability of dissolved silicate in the Labrador Sea between 1980 and 2015. 10.5194/egusphere-2023-2538
5. Bellenger, H., Bopp, L., **Ethé, C.**, Ho, D., Duvel, J., Flavoni, S., Guez, L., Kataoka, T., Perrot, X., Parc, L., Watanabe, M. (2023). Sensitivity of the Global Ocean Carbon Sink to the Ocean Skin in a Climate Model. *Journal of Geophysical Research: Oceans*. 128. 10.1029/2022JC019479.
6. Hutchinson, K., Deshayes, J., **Ethé, C.**, Rousset, C., de Lavergne, C., Vancoppenolle, M., Jourdain, N. & Mathiot, P. (2023). Improving Antarctic Bottom Water precursors in NEMO for climate applications. *Geoscientific Model Development*. 16. 3629-3650. 10.5194/gmd-16-3629-2023.
7. Barrier, N., Lengaigne, M., Rault, J., Person, R., **Ethé, C.**, Aumont, O., Maury, O. (2023). Mechanisms underlying the epipelagic ecosystem response to ENSO in the equatorial Pacific ocean. *Progress in Oceanography*. 213. 103002. 10.1016/j.pocean.2023.103002.
8. Dupont, L., Le Mézo, P., Aumont, O., Bopp, L., Clerc, C., **Ethé, C.**, Maury, O. (2022). High trophic level feedbacks on global ocean carbon uptake and marine ecosystem dynamics under climate change. *Global Change Biology*. 29. 10.1111/gcb.16558.
9. Bopp, L., Aumont, O., Kwiatkowski, L., Clerc, C., Dupont, L., **Ethé, C.**, Séférian, R. & Tagliabue, A. (2021). Diazotrophy as a key driver of the response of marine net primary productivity to climate change. 10.5194/bg-2021-320
10. Silvy, Y., Rousset, C., Guilyardi, E., Sallée, J.-B., Mignot, J., **Ethé, C.**, and Madec, G.: A modeling framework to understand historical and projected ocean climate

change in large coupled ensembles. *Geoscientific Model Development*. 15. 7683-7713. 10.5194/gmd-15-7683-2022

11. Mignot, J., Hourdin, F., Deshayes, J., Boucher, O. , ..., **Ethé, C.** ... Silvy, Y. (2021). The tuning strategy of IPSL-CM6A-LR. *Journal of Advances in Modeling Earth Systems*. 13. 10.1029/2020MS002340.
12. Laugie, M., Donnadieu, Y., Ladant, J. B., Bopp, L., **Ethé, C.**, Raisson, F. (2021). Exploring the impact of Cenomanian paleogeography and marinegateways on oceanic oxygen. 10.1002/essoar.10505743.1.
13. Bricaud, C., Le Sommer, J., Madec, G., Calone, C., Deshayes, J., **Ethé, C.**, Chanut, J., Levy, M. (2020). Multi-grid algorithm for passive tracer transport in the NEMO ocean circulation model: a case study with the NEMO OGCM (version 3.6). *Geoscientific Model Development*. 13. 5465-5483. 10.5194/gmd-13-5465-2020.
14. Jouanno, J., Benshila, R., Berline, L., Soulié, A., ... **Ethé, C.**, et al. (2020). A NEMO-based model of Sargassum distribution in the Tropical Atlantic: description of the model and sensitivity analysis (NEMO-Sarg1.0). 10.5194/gmd-2020-383.
15. Boucher, O., Servonnat, J., Albright, A. ..., **Ethé, C.**, et al. (2020). Presentation and evaluation of the IPSL-CM6A-LR climate model. *Journal of Advances in Modeling Earth Systems*. 12. 10.1029/2019MS002010.
16. Sepulchre, P., Caubel, A., Ladant, J.B., ..., **Ethé, C.**, et al. (2020). IPSL-CM5A2 - An Earth system model designed for multi-millennial climate simulations. *Geoscientific Model Development*. 13. 3011-3053. 10.5194/gmd-13-3011-2020.
17. Lurton, T., Balkanski, Y., ..., **Ethé, C.**, et al. (2020). Implementation of the CMIP6 forcing data in the IPSL-CM6A-LR model. *Journal of Advances in Modeling Earth Systems*. 12. e2019MS001940. 10.1029/2019MS001940.
18. Séférian, R., Nabat, P., Michou, M., ..., **Ethé, C.** , Madec, G. (2019). Evaluation of CNRM Earth-System model, CNRM-ESM 2-1: role of Earth system processes in present-day and future climate. *Journal of Advances in Modeling Earth Systems*. 11. 10.1029/2019MS001791.
19. Terhaar, J., Orr, J., Ethé, C., Regnier, P., Bopp, L. (2019). Simulated Arctic Ocean Response to Doubling of Riverine Carbon and Nutrient Delivery. *Global Biogeochemical Cycles*. 33. 10.1029/2019GB006200.
20. Berthet, S., Séférian, R., Bricaud, C., Chevallier, M. , Voldoire, A., **Ethé, C.** (2019). Evaluation of an online grid-coarsening algorithm in a global eddy-admitting ocean-biogeochemical model. *Journal of Advances in Modeling Earth Systems*. 10.1029/2019MS001644
21. Guieu, C., Al Azhar, M., Aumont, O., Mahowald, N., Levy, M., **Ethé, C.**, Lachkar, Z. (2019). Major Impact of Dust Deposition on the Productivity of the Arabian Sea. *Geophysical Research Letters*. 46. 10.1029/2019GL082770.

22. Terhaar, J., Orr, J. C., Gehlen, M., **Ethé, C.**, and Bopp, L.: Model constraints on the anthropogenic carbon budget of the Arctic Ocean, *Biogeosciences Discuss.*, <https://doi.org/10.5194/bg-2018-283>, in review, 2018
23. Aumont, O., van Hulten, M., Roy-Barman, M., Dutay, J.-C., **Ethé, C.**, and Gehlen, M. 2017 : Variable reactivity of particulate organic matter in a global ocean biogeochemical model, *Biogeosciences*, 14, 2321-2341, doi:10.5194/bg-14-2321-2017
24. Vallivattathillam, P., Iyyappan, S., Lengaigne, M., **Ethé, C.**, Vialard, J., Levy, M., Suresh, N., Aumont, O., Resplandy, L., Naik, H., and Naqvi, W., 2017 : Positive Indian Ocean Dipole events prevent anoxia off the west coast of India, *Biogeosciences*, 14, 1541-1559, doi:10.5194/bg-14-1541-2017
25. Keerthi, M. G., Lengaigne, M., Levy, M., Vialard, J., Parvathi, V., de Boyer Montégut, C., **Ethé, C.**, Aumont, O., Suresh, I., Akhil, V. P., and Muraleedharan, P. M.: Physical control of interannual variations of the winter chlorophyll bloom in the northern Arabian Sea, *Biogeosciences*, 14, 3615-3632, <https://doi.org/10.5194/bg-14-3615-2017>, 2017
26. Bourgeois, T., Orr, J. C., Resplandy, L., Terhaar, J., **Ethé, C.**, Gehlen, M., and Bopp, L., 2016 : Coastal-ocean uptake of anthropogenic carbon, *Biogeosciences*, 13, 4167-4185, doi:10.5194/bg-13-4167-2016
27. Menkes, C. E., M. Lengaigne, M. Lévy, **C. Ethé**, L. Bopp, O. Aumont, E. Vincent, J. Vialard, and S. Jullien , 2016 : Global impact of tropical cyclones on primary production, *Global Biogeochem. Cycles*, 30, doi:10.1002/2015GB005214
28. R., Wang, Y., Balkanski , L. Bopp , O. Aumont, O. Boucher, P. Ciais, M. Gehlen, J. Peñuelas, **C. Ethé**, D. Hauglustaine, B. Li, J. Liu, F. Zhou, S. Tao, 2015 : Influence of anthropogenic aerosol deposition on the relationship between oceanic productivity and warming, *Geophys. Res. Lett.*, 42, 10,745-10,754
29. O. Aumont, **C. Ethé**, A. Tagliabue, L. Bopp, and M. Gehlen, PISCES-v2, 2015 : An ocean biogeochemical model for carbon and ecosystem studies, *Geosci. Model Dev. Discuss.*, 8, 1375-1509, 2015, doi:10.5194/gmdd-8-1375-2015
30. Roland Séférian, Laurent Bopp, Marion Gehlen, James C. Orr, **C. Ethé**, et al.. Skill assessment of three earth system models with common marine biogeochemistry. *Climate Dynamics*, Springer Verlag, 2013, 40, pp.2549-2573.
31. Levy, M., L. Bopp, P. Karleskind, L. Resplandy, **C. Ethé** and F. Pinsard, 2013 Physical pathways for carbon transfers between the surface mixed-layer and the ocean interior, *GBC*, doi: 10.1002/gbc.20092, Vol 27, 1-12
32. Foujols, M.-A., **Ethé, C.**, Levy, M. (2013). Apports scientifiques des simulations réalisées sur le Earth Simulator 10 ans après !.
33. Séférian, R., Bopp, L., Gehlen, M., Orr, J., **Ethé, C.**, Cadule, P., Aumont, O., Méliá, D., Voltaire, A., Madec, G. (2013). Skill assessment of three earth system models with common marine biogeochemistry. *Climate Dynamics*. 40.

34. Dufresne, J.-L., Foujols, M.-A., Denvil, S., Caubel, A., Marti, O., ... **Ethé, C.**, et al. (2013). Climate change projections using the IPSL-CM5 earth system model: from CMIP3 to CMIP5. *Climate Dynamics*. 40. 2123-2165. 10.1007/s00382-012-1636-1.
35. Drobinski, P., Anav, A., ..., **Ethé, C.**, et al. (2012). Model Of the Regional Coupled Earth system (MORCE): Application to process and climate studies in vulnerable regions. *Environmental Modelling & Software*. 35. 1-18. 10.1016/j.envsoft.2012.01.017.
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37. Levy, M., Resplandy, L., Klein, P., Capet, X., Iovino, D., **Ethé, C.** (2012). Grid degradation of submesoscale resolving ocean models: Benefits for offline passive tracer transport. *Ocean Modelling*. 48. 1-9. 10.1016/j.ocemod.2012.02.004.
38. Gehlen, M., Gangstø, R., Schneider, B., Bopp, L., Aumont, O., **Ethé, C.** (2007). The fate of pelagic CaCO₃ production in a high CO₂ ocean: A model study. *Biogeosciences*. 4.
39. de Boyer Montégut, C., Vialard, J., Shenoi, S., Shankar, D., Durand, F., **Ethé, C.**, Madec, G. (2007). Simulated Seasonal and Interannual Variability of the Mixed Layer Heat Budget in the Northern Indian Ocean*. *Journal of Climate*. 20.
40. Timmermann, R., Goosse, H., Madec, G., Fichefet, T., **Ethé, C.**, Dulière, V. (2005). On the representation of high latitude processes in the ORCA-LIM global coupled sea ice-ocean model. *Ocean Modelling*. 8. 175-201. 10.1016/j.ocemod.2003.12.009. 10.1175/JCLI4148.1
41. Durand, F., Shetye, S.R., Vialard, J., Shankar, D., Shenoi, S., **Ethé, C.**, Madec, G. (2004). Impact of temperature inversions on SST evolution in the South-Eastern Arabian Sea during pre-summer monsoon season. *Geophysical Research Letters*. 31. 10.1029/2003GL018906.
42. **Ethé, C.**, Basdevant, C., Sadourny, R., Appu, K., Harenduprakash, L., Sarode, P., Viswanathan, G.. (2002). Air mass motion, temperature, and humidity over the Arabian Sea and western Indian Ocean during the INDOEX intensive phase, as obtained from a set of superpressure drifting balloons. *Journal of Geophysical Research*. 107. 10.1029/2001JD001120.
43. **Ethé, C.** : Modélisation et simulation de trajectoires de ballons dérivants : Applications à l'étude de la circulation atmosphérique sur l'Océan Indien. (2001), Thèse de doctorat, Université Paris XI

B - Documentations techniques

1. Documentation technique "TOP - Tracers in Ocean Paradigm - The NEMO Tracers engine" du NEMO TOP Working Group (2022). Notes du Pôle de modélisation de l'Institut Pierre-Simon Laplace (IPSL) (v4.2.0, Number 28). DOI:10.5281/zenodo.1471700
2. "NEMO-PISCES 1D Demonstration guide". **C. Ethé**, Person, R., and O. Aumont (2022). DOI : 10.5281/zenodo.7139521

C - Documents pédagogiques

1. "PISCES Practical Session for Advanced Users". Person, R., Aumont, O., **Ethé, C.**, Perruche, C., & Echevin, V. (2022, 2020), DOI:10.5281/zenodo./7430043, DOI:10.5281/zenodo./4321340.
2. "PISCES Practical Session for Beginners". Aumont, O., **Ethé, C.**, Echevin, V., Perruche, C. & Person, R. (2021), DOI:10.5281/zenodo.5550112.
3. "Training courses in IPSL modeling tools and environment (modipsl and libIGCM)". A. Caubel, P. Cadule, A. Cozic, **C. Ethé**, L. Fairhead, L. Falletti, J. Ghattas, N. Lebas, T. Lurton, S. Nguyen, R. Pennel, R. Person (2024, 2023, 2022), https://forge.ipsl.jussieu.fr/igcmg_doc/wiki/Doc/Training

D - Travaux pratiques

1. Modélisation de la biogéochimie marine avec le modèle PISCES, niveau Débutants et Utilisateurs Avancés, LOCEAN, Paris, **2020, 2021, 2022, 2023**, 15 participants/an.
2. Modélisation de l'océan et de la biogéochimie marine avec le modèle CROCO-PISCES, niveau débutants et avancés, CSIR, Le Cap (Afrique du Sud), **2022, 2023**, 30 participants/an.
3. Initiation à la modélisation de la biogéochimie marine, National Institut of Oceanography, Goa (Inde), **2015**, École d'hiver "Using models to advance our understanding of the Indian Ocean biogeochemical variability", 15 participants indiens et bangladais.
4. Travaux pratiques modipsl-LibIGCM, Orsay (IDRIS), **2017-2024**, 40 participants/an.